

Bereskin & Parr

INTELLECTUAL PROPERTY LAW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Appl. No : 10/646,930 Confirmation No.: 1597
Inventor: : Legario et al
Filed: : August 25, 2003
Title: : Storage Stable ANFO Explosive Compositions Containing Chemical Coupling Agents and Method for Producing Same
TC./A.U. : 1793
Examiner : Aileen B. Felton

Docket No. : 6826-195/PMdC Customer No. : 001059

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Honorable Commissioner for Patents

P. O. Box 1450

Alexandria, Virginia 22313-1450

Dear Sir:

The present letter is filed in view of the Notice of Panel Decision from Pre-Appeal Brief Review dated February 8, 2011. Applicant has appealed to the Board of Patent Appeals and Interferences from the final decision of the Examiner dated July 20, 2010, finally rejecting claims 31-33, 35, 36, 38-44, 48, 49, 51 and 53-56. Applicant respectfully submits herewith their brief on appeal.

This brief contains these items under the following headings, and in the order set forth below (37 C.F.R. § 41.37):

- I. Real Party in Interest
- II. Related Appeals and Interferences
- III. Status of Claims
- IV. Status of Amendments
- V. Summary of the Claimed Subject Matter
- VI. Grounds of Rejection to be Reviewed on Appeal
- VII. Arguments
- VIII. Claims Appendix
- IX. Evidence Appendix
- X. Related Proceedings Appendix

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Appendices

- (i) Claims Appendix;
- (ii) Evidence Appendix; and
- (iii) Related Proceedings Appendix.

I. Real Party in Interest Statement

The real party in interest is ETI Holdings Corporation, the assignee of record.

II. Related Appeals

None.

III. Status of Claims

1. Total Number of Claims in Application

A total of 56 claims have been presented during prosecution of this case.

2. Status of All of the Claims

- A. Claims Cancelled: 1-30, 37, 45, 47, 50 and 52.
- B. Claims Withdrawn: 34 and 46
- C. Claims Pending: 31-33, 35, 36, 38-44, 48, 49, 51 and 53-56.
- D. Claims Allowed: None
- E. Claims Objected to: None
- F. Claims Rejected: 31-33, 35, 36, 38-44, 48, 49, 51 and 53-56.

3. Claims on Appeal

The claims on appeal are Claims 31-33, 35, 36, 38-44, 48, 49, 51 and 53-56.

IV. Status of Amendments

The claims were last amended on April 19, 2010. There have been no claim amendments filed subsequent to the rejection from which this Appeal is taken, contained in the Office Action, made 'Final' of July 20, 2010.

V. Summary of Claimed Subject Matter

Claim 31 is the only independent claim and is directed to a method for reducing oil segregation in an ANFO explosive composition. The composition comprises an organic combustible fuel, inorganic oxidizer particles that include ammonium nitrate particles, and a chemical coupling agent (see page 2, lines 18-21). The chemical coupling agent has a long chain aliphatic portion capable of associating with the combustible fuel and an epoxy group. (see page 2, lines 28-31). The organic combustible fuel and the chemical coupling agent are combined to produce a flowable ANFO explosive containing inorganic oxidizer particles coated with the liquid mixture and one or more conventional additives. The flowable ANFO is placed in an explosive borehole and maintained as flowable until detonation.

VI. Grounds of Rejection to be Reviewed on Appeal

The rejections to be reviewed on this appeal are as follows:

(i) Rejection under 35 U.S.C. 103(a) given Kelley in view of Baker

Claims 31-33, 35, 36, 38, 43, 44, 48, 49, 51, 53 and 56 were rejected as being obvious under 35 USC 103(a) given US 5,527,496 of Kelly in view of US 4,595,430 of Baker.

(ii) Rejection under 35 USC 103(a) given Kelly in view of Baker and further in view of Richard et al.

Claims 39-42, 54 and 55 were rejected as obvious under 35 U.S.C. 103(a) given Kelley in view of Baker and further in view of Richard et al. (US 6,113,714).

For the purposes of this appeal all of the claims rise and fall together.

VII. Argument

1. Governing Law

(a) 35 USC 103 Obviousness Inquiries: *Graham v. John Deere*

The factors a court will look at when determining obviousness under 35 USC 103 were outlined by the Supreme Court in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The court held that obviousness should be determined by considering:

1. the scope and content of the prior art;
2. the level of ordinary skill in the art; and
3. the differences between the claimed invention and the prior art.

Having considered these issues, it is appropriate to consider objective evidence of non-obviousness, such as:

1. commercial success;
2. long-felt but unsolved needs; and
3. failure of others.

(b) MPEP 2142 – Legal Concept of Prima Facie Obviousness - Excerpts

“The legal concept of *prima facie* obviousness is a procedural tool of examination which applies broadly to all arts. ...The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.”

“The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” MPEP § 2141 III. Office personnel should continue to provide a reasoned explanation for every obviousness rejection.” (Emphasis added.)

“A decision to make or maintain a rejection in the face of all the evidence must show that it was based on the totality of the evidence.”

(c) References to be Considered in Their Entirety
Picking and Choosing Prohibited: Impermissible Hindsight Combination

“Determination of obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention” *Crown Operations International Ltd. v. Solutia Inc.*, 289 F.3d. 1367 at 1376; 62 USPQ 2d 1917 (Fed. Cir. 2002).

“Measuring a claimed invention against the standard established by section 103 requires the oft difficult but critical step of casting the mind back to the time of the invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. Close adherence to this methodology is especially important in the case of *less technologically complex* inventions, where the very ease with which the invention can be understood may prompt one “to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used

against its teacher.” *Life Technologies Inc. v. Clontech* 224 F.3d 1365 at 1369; 55 USPQ 2d, 1313 at 1316 (Fed. Cir. 2000). (Internal citations omitted).

The law *requires* that references be read as a whole: it is impermissible within the framework of s.103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. (*In re Wesslau*, 353 F. 2d 238; 147 USPQ 391 (CCPA 1965)). *Chisum on Patents* lists no less than 17 decisions by the Court of Appeals for the Federal Circuit excoriating hindsight analyses. (See *Chisum on Patents*, vol. 2, ch. 5.03[2][c], pp 5 – 105 – 106, footnotes 25 and 26.)

In analysing the prior art, MPEP § 2143.03(VI) states that “[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” Accordingly, where cited art teaches away from a claimed feature, the cited art is not available for the purposes of an obviousness rejection.

See also: *AKZO NV v. US Intern. Trade Com'n*, 808 F. 2d 1471 – (CAFC, 1986) at 1481: “... prior art references before the tribunal must be read as a whole and consideration must be given where the references diverge and teach away from the claimed invention. Moreover, appellants cannot pick and choose among individual parts of assorted prior art references” (Emphasis added, internal citations omitted.)

(d) Teaching Away and Destruction of Function

There have been many case that have held that “teaching away is the antithesis of obviousness. Among many examples:

A *prima facie* case of obviousness can always be rebutted by showing that the art teaches away from the claimed invention *in any material respect*. (*In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ 2d 1362, 1366 (Fed. Cir 1997) (Emphasis added.).

Prima facie grounds for rejection under 35 USC 103 cannot be established where the reference teaches away from the invention: An applicant may rebut a *prima facie* case of obviousness by showing that the prior art teaches away from the claimed invention in any material aspect (See: *In re Peterson*, 315 F. 3d 1325 at 1331, 65 USPQ 2d 1379, CAFC, 2003)). References that teach away from the claimed invention cannot serve as predicates for a *prima facie* case of obviousness (See: *In re Gurley*, 27 F. 3d 551 at 553; 31 USPQ 2d 1130

(CAFC 1994)).

In evaluating the prior art, references must be read as a whole. There can be no finding of obviousness where a reference teaches away from the proposed modification or combination, (See *Gillette v. S.C. Johnson* 919 F.2d 720 at 724 (Fed. Cir. 1990; *In re Geisler* 116 F.3d 1465 at 1469 (Fed. Cir. 1997)) or where the proposed modification or combination would destroy the functionality of the reference for its own purpose. (See: *In re Gordon* 733 F.2d 900 at 902; 221 USPQ 1125 at 1127, (Fed. Cir.1984)).

(e) Assessing the Scope and Content of the Prior Art – MPEP 2141

Under *Graham* the Examiner is required to assess the scope and content of the prior art. “The prior art” does not mean merely the individual integers of art selected by the Examiner. Rather it has a broader meaning: It requires an assessment of the state of the art more generally. On this point, MPEP 2141 states *inter alia*:

“Office personnel fulfill the critical role of factfinder when resolving the *Graham* inquiries. ... When making an obviousness rejection, *Office personnel must therefore ensure that the written record includes findings of fact concerning the state of the art and the teachings of the references applied.* (Emphasis added). ...

“In short, the focus when making a determination of obviousness should be on what a person of ordinary skill in the pertinent art would have known at the time of the invention, and on what such a person would have reasonably expected to have been able to do in view of that knowledge. This is so regardless of whether the source of that knowledge and ability was documentary prior art, general knowledge in the art, or common sense.”

“In determining the scope and content of the prior art, Office personnel must first obtain a thorough understanding of the invention disclosed and claimed in the application under examination by reading the specification, including the claims, to understand what the applicant has invented. ... Once the scope of the claimed invention is determined, Office personnel must then determine what to search for and where to search.” (MPEP 2141, II)

“*Prior art is not limited just to the references being applied,* but includes the understanding of one of ordinary skill in the art.” (MPEP 2141, III)

2. The Rejection in the Office Action

The current rejection of claim 31 reads as follows:

“Claims 31, 33, 35, 36, 38, 43, 44, 48, 49, 51, 53, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley (5527498) in view of Baker (4595430).

Kelley discloses an ANFO explosive mixed by various methods for use in boreholes that comprises diesel fuel with a surfactant and ammonium nitrate.

Baker teaches that it is known to replace a portion of ammonium nitrate with an additive such as epoxidized soybean oil in an ANFO type blasting composition (col. 8 and Table ii).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the epoxidized soybean oil as taught by Baker since Baker suggests that it is a known additive to replace a portion of ammonium nitrate in an ANFO type blasting composition and since Kelley relates to an ANFO type blasting composition that use ammonium nitrate. The oil separation is an inherent property of the composition. As to limitations which are inherent in a reference, note the case law of In re Ludke, 169 USPQ 563; In re Swinchart, 169 USPQ 226, In re Fitzgerald, 205 USPQ 594; In re Best et al., 195 USPQ 430; and In re Brown 174 USPQ 685,688.”

This is the entirety of the rejection of claim 31.

3. Applying the Law - Teaching Away

The Applicant respectfully submits that the Baker document has been interpreted out of context and contrary to law. The very premise of the Baker document is that the compounds to which Baker’s invention applies are ones that explicitly are not ANFO explosives. There is no mention of ANFO in the Baker reference except in Column 1 where ANFO is mentioned *solely for distinguishing it* from dynamite. Baker says:

“This invention relates to explosives, and in particular [to] the desensitization of dynamites by use of desensitizing compounds ...” (Col. 1, lines 5 – 7.)

“Dynamite is a hazardous material, both to manufacture and use. The hazards involved in utilizing dynamite result from its sensitivity. In the explosives art, sensitivity is the relative ease with which a particular explosive may be detonated by a particular impulse, for example, impact, explosion, fire, or friction.” (Col. 1, lines 21 – 27.)

"To lessen the hazard of accidental initiation the widespread use of ANFO became common in the industry. ANFO is ammonium nitrate fuel oil mixture and is relatively insensitive to detonation except by the use of a booster charge. ANFO had the disadvantage of being deactivated by water." (Col. 1, lines 27 – 36.)

"However, there continue to be many applications *where there is no substitute for dynamite*. Dynamite has several advantages over ANFO ..." (Col. 1, lines 37 – 39, emphasis added.)

"The present invention addresses these needs and provides for the desensitization of dynamite with only minimally reduced detonation performance." (Col 2, lines 55 – 57, emphasis added.)

Thus the context of the entire Baker document is that it pertains to applications in which there is "no substitute for dynamite". Given that the only substitute for dynamite noted by Baker in column 1 is ANFO, and Baker goes on to explain the advantages of dynamite over ANFO, it therefore follows that when Baker says there is "no substitute for dynamite" he means situations where ANFO cannot be used. That is the premise of his invention. *I.e.*, the entire document is about situations where ANFO is not suitable for use.

The Applicant respectfully submits that a person skilled in the art must be taken as being able to read. Any reading of the document, whether by a person of skill in the art or otherwise, clearly reveals that Baker is teaching about an invention where ANFO is not being used.

The fundamental premise of Baker is that it applies where ANFO is not used.
The fundamental premise of claim 31 is that it applies where ANFO is used.

These two premises are diametrically opposed.
They clearly teach in opposite directions.

As noted above, a *prima facie* case of obviousness can not be established where the art teaches away from the claimed invention *in any material respect*. (*In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ 2d 1362, 1366 (Fed. Cir 1997). Here, it is not merely a material respect: It is the fundamental starting point of the claim.

The Applicant respectfully submits that the rejection of claim 31, and therefore of all of the other pending claims cannot stand. The Applicant therefore respectfully requests that this Appeal be upheld, and that all of the claims pending in this case now be allowed.

4. Applying the Law: No Findings on Level of Skill and Knowledge of Persons Skilled in the Art

As noted, the entire rejection of claim 31 is reproduced above. At no point does it provide any insight into any finding of fact of the level or nature of knowledge to be attributed to a person of ordinary skill in the art.

Yet even on the objective evidence made of record in this case by the Examiner, there is sufficient, if not ample, basis for finding that a person of ordinary skill in the art (a) knows the difference between dynamite and ANFO; and (b) knows that ANFO and dynamite both have strengths and weaknesses that make them more or less suitable for different applications. Without any additional objective evidence, this much, at least, is clear from the discussion in Baker at column 1, lines 12 – 36, in which Baker is speaking of matters that he considers to be well known in the industry: “To lessen the hazard of accidental initiation, the widespread use of ANFO became common”, for example, implies (a) that the hazards of accidental initiation of dynamite were well known in the art; and (b) that the widespread use of ANFO is known; and (c) that the widespread use – i.e., well known use in the art – was because of the correspondingly well known properties of ANFO not to have the same accidental initiation problems as dynamite. That is the clear context of Baker’s comments. There is no evidence of record in this matter contradicting Baker’s statements.

The supposition then, that a person of skill in the art would turn to a reference about prevention of accidental initiation – the very property that ANFO already has relative to dynamite – as a source of information that would either (a) lead to a reformulation of an ANFO compound; or (b) be thought likely to reveal anything of interest about how to reformulate an ANFO compound to resist or delay fuel segregation, and thus extend useful use times – is completely without foundation in either the Baker or Kelly references. There is, further, no finding of fact made in the Office Action from either those sources or from any other source of objective evidence of record to show that such a serendipitous insight would be found in the general knowledge of persons of ordinary skill in the art.

On the contrary, and contrary to the *Graham* requirements, there are no such findings of fact, at all, in the Office Action. Thus, even if the conclusion made in the Office Action were correct (which the Applicant respectfully submits it is not) that a person of ordinary skill would consider it “obvious” to make such a modification, by failing to make any findings of fact with respect to the level of knowledge and skill, the Office Action fails to follow the procedure required by *Graham*, and therefore fails to establish *prima facie* grounds of rejection under 35 USC 103 according to law.

5. Failure to Read the Reference in Context

As noted, the entirety of the rejection is reproduced above.

There is no mention of the context of Baker, or even of Baker’s central teaching.

Baker is unmistakably about the desensitization of dynamite. That is the title of the patent: “Desensitized Dynamites”. He says the patent is about desensitized dynamite in the very first sentence of his disclosure at col. 1, line 5. Baker goes on to discuss desensitization, at length, in col. 2, lines 6 – 63, and states, flat out: “The present invention ... provides for the desensitization of dynamite with only minimally reduced detonation performance.”

The Office Action makes no note of this.

- (a) The Office Action does not anywhere use the words “dynamite” or “desensitizing”.
- (b) The Office Action does not, at any place, note that Baker himself explicitly distinguishes his compounds from ANFO.
- (c) The Office Action does not, at any place, note that there is no mention of ANFO in the Baker document after the point at which Baker explains that his invention pertains to desensitizing dynamite where there is “no substitute” for dynamite.
- (d) The Office Action plucks one example of a composition from Baker, without noting, at any point, that the example chosen is for a type of dynamite.

Prior even to making a search of the prior art, the Examiner is required to read and understand the Applicant’s specification and claims in context. The Applicant’s disclosure discusses the need to delay or prevent segregation in the ANFO composition, i.e., to make the *ANFO* compound *easier* to detonate, for a longer period of time.

The Office Action makes no mention that the purpose of Baker is to make the *dynamite* compound less sensitive, i.e., *less easy*, to detonate (see col. 1, lines 24 – 27).

There is, in fact, no mention, at all, in the Office Action or anything having to do with the context of the Baker reference. On the contrary, the Office Action states:

“Baker teaches that it is known to replace a portion of ammonium nitrate with an additive such as epoxidized soybean oil in an ANFO type blasting composition (col. 8 and Table ii).”

The Applicant respectfully disagrees. Baker makes no such teaching in respect of ANFO type blasting compositions. The word “ANFO” does not appear anywhere in column 8 or in column ii. It would be strange were it otherwise, given that Baker has just told the reader that the whole document is about desensitizing dynamite.

Furthermore, far from being an “ANFO” example, Baker tells the reader, explicitly, that it is a dynamite example: “To test the effect of each compound a control *dynamite* of a semi-gelatin type was made of the formula: ...” (Col. 8, lines 32 – 33, emphasis added.)

The Office Action goes on to state:

It would have been obvious to one having ordinary skill in the art at the time the invention was made *“to use the epoxidized soybean oil as taught by Baker since Baker suggests that it is a known additive to replace a portion of ammonium nitrate in an ANFO type blasting composition ...”*

The Applicant respectfully submits that this statement is also incorrect. Baker is not directed to “ANFO type blasting compositions”. Baker is clearly directed to dynamite-type explosives. The Office Action does not identify any place at which Baker teaches the use of “epoxidized soy bean oil” in an ANFO explosive. Baker is discussing dynamite, not ANFO. The Applicant respectfully submits that this is a clear mischaracterization of the Baker reference and its teachings.

Thus, once again, the Applicant respectfully submits that even if the conclusion were correct, there has been no *prima facie* ground for rejection properly established under 35 USC 103 because, contrary to law, the Baker reference has not been read in context as

required by law, and the rejection rests upon an interpretation that is factually incorrect in at least two places.

The Applicant respectfully submits that even if there were no other grounds of traverse, this basis, alone, would be sufficient to overcome the rejection.

6. Applying the Test – Failure Clearly to Articulate a Reason for Combination

First, it may be recalled that Kelley pertains to increasing the density of ANFO, an object that would be made difficult if ANFO were not being used. Second, Baker, by stark contrast, applies where there is “no substitute” dynamite, i.e., ANFO is not used. The premise of Kelley is thus inconsistent with the basic premise of Baker.

Under *KSR*, the key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” MPEP § 2141 III.

The Office Action provides no clearly articulated reason for combining the references. Contrary to *In re Khan*, rather than providing a reason, the Office Action merely relies upon the bold, unsupported conclusory statement that “

“It would have been obvious to one having ordinary skill in the art at the time the invention was made “to use the epoxidized soybean oil as taught by Baker since Baker suggests that it is a known additive to replace a portion of ammonium nitrate in an ANFO type blasting composition...”

The first part of the statement is precisely the kind of unsupported, bald conclusory statement prohibited by *In re Kahn*. The second part of the statement is of no help: as noted above, it is an inaccurate characterization of Baker in any event.

The alleged “reason” is thus really no reason at all. It is merely a recitation of an (incorrect) finding of one element in Baker, and finding a second element in Kelley, followed

by an assertion from which the Applicant is, apparently, to infer that the mere existence of the features is sufficient to imply their “obvious” combination – and this notwithstanding that the essential starting point of Kelley is the use of ANFO, while the starting point of Baker is the precise opposite, *i.e.*, in applying where ANFO (or any other substitute for dynamite) is not used.

Even were the characterization of Baker correct (it plainly is not), it is long-settled law that the mere fact that elements can be combined does not mean they *would* be combined. A rejection for obviousness must look at the state of the art at the time the invention was made. Proving a reason to select a claim feature “depends on more than just structural similarity, but also knowledge in the art of the functional properties and limitations of the prior art compounds.” *Daiichi Sankyo v. Matrix Laboratories, Ltd* (Fed. Cir. 2010). The absence of a clearly articulated reason is particularly striking where the Office Action fails to explain:

- (a) why a person skilled in art would draw from Baker, a document about making dynamite explode *less easily*, lessons about how to make ANFO explode *more easily*;
- (b) why a document whose basic premise is the use of dynamite, *not* ANFO, can be found to teach the use of ANFO, modified or otherwise;
- (c) how a reference in which every example is identified as a dynamite, and in which dynamite is clearly and explicitly distinguished from ANFO, can, nonetheless be said to teach the modification of ANFO;
- (d) why a person skilled in the art, dealing with the ANFO composition of Kelley, would look to Baker’s teachings about desensitizing dynamite for anything; and
- (e) even if improbably so, why they would pick this one item out of 24 alternatives, where no reason for doing so is found anywhere in either document, or in any other evidence made of record in this matter.

In that regard, the Office Action does not provide a clearly articulated reason for making the proposed combination upon which the rejection is based. On that ground, alone, the Office Action fails to establish *prima facie* grounds for rejection as required by law under 35 USC 103.

7. Applying the Test – Impermissible Hindsight Analysis

As noted above, it is impermissible within the framework of s.103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. (*In re Wesslau*, 353 F. 2d 238; 147 USPQ 391 (CCPA 1965)).

The problem addressed by the Applicant relates to delaying or discouraging segregation of the fuel oil portion of ANFO. Kelley is about, *inter alia*, increasing ANFO prill density. Baker is about desensitizing dynamite. Baker is directed to a completely different problem, of a different kind of explosive from either the present invention or Kelley. Baker has nothing to do with ANFO or the problems addressed by either Kelley or the Applicant. Moreover, there is not the slightest hint in Baker (or any other evidence relied upon in the Office Action) that epoxidized soybean oil would be useful to reduce oil segregation in ANFO types explosives.

The Applicant respectfully points out that the rejection of claim 31 is based on finding the use of ANFO in one document, Kelley; finding a missing element in Baker; and then alleging that it is obvious to combine A with B, without *any* rational justification for the combination being provided; without the mention of even a single word of the context of Baker; and without so much as acknowledging that Baker is about dynamite, not ANFO.

Instead the Office Action, in precisely the manner prohibited by case law, for no apparent reason, selectively plucks one item (out of no less than 24 alternatives in Table II), out of thin air as if by magic, and proposes the modification of Kelley, a completely unrelated patent addressing a different problem, in relation to a different explosive.

The inference is inescapable that the Applicant's claims have been used as a roadmap in an impermissible hindsight analysis in which the missing feature is are plucked selectively from the reference without a credible supporting reason.

On this ground, too, the Applicant respectfully requests that the Board find that *prima facie* grounds for rejection under 35 USC 103(a) have not been properly established in law in respect of claim 31 or any claim dependent therefrom. Accordingly, the Applicant respectfully submits that claims 31-33, 35, 36, 38, 43, 44, 48, 49, 51, 53 and 56 are inventive over the teachings of Kelley and Baker.

**8. Rejection under 35 U.S.C. 103(a) over Kelley in view of Baker in view of Richard
Claims 39-42, 54 and 55**

At least for the reasons recited above, the Applicant submits that claims 39-42, 54 and 55 are inventive over Kelley and Baker in view of Richard.

9. Concluding Commentary

The Applicant has clearly demonstrated that the present invention as claimed is distinguishable over the cited art, whether alone or in combination, and satisfies all requirements under 35 U.S.C. §§ 101, 102, 103 and 112. Therefore, Applicant respectfully requests the Board of Patent Appeals and Interferences to reverse the final rejection of the Examiner and instruct the Examiner to use a notice of allowance of all claims.

Please charge Deposit Account No. 02-2095 of Bereskin & Parr LLP an amount of \$540.00 for filing the Appeal Brief, as required under 37 C.F.R. §41.20(b)(s). The Commissioner is hereby authorized to charge any fees or credit any overpayments associated with this application to Deposit Account No. 02-2095 of Bereskin & Parr LLP

Respectfully submitted,

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VIII. Claims Appendix

1-30. (Cancelled)

31. (Previously Presented) A method for reducing oil segregation in an ANFO explosive composition and using the ANFO explosive composition, comprising:

- a) providing an ANFO explosive suitable organic combustible fuel, inorganic oxidizer particles comprising ammonium nitrate particles and a chemical coupling agent having a long chain aliphatic portion and an epoxy group;
- b) combining the organic combustible fuel and the chemical coupling agent to produce a liquid mixture and then combining the liquid mixture with the inorganic oxidizer particles to produce a flowable ANFO explosive consisting of inorganic oxidizer particles coated with the liquid mixture and one or more conventional additives;
- c) placing the flowable ANFO explosive in a borehole; and,
- d) maintaining the ANFO explosive as flowable until detonation.

32. (Original) The method as claimed in claim 31 further comprising selecting the chemical coupling agent from the group consisting of an epoxidized oil, an ester derivative of epoxidized oil, and mixtures thereof.

33. (Original) The method as claimed in claim 32 further comprising selecting epoxidized vegetable oil as the chemical coupling agent.

34. (Withdrawn) The method as claimed in claim 32 further comprising selecting epoxidized fish oil as the chemical coupling agent.

35. (Original) The method as claimed in claim 31 further comprising selecting a chemical coupling agent containing a plurality of epoxy groups per molecule of chemical coupling agent.

36. (Original) The method as claimed in claim 31 further comprising selecting a chemical coupling agent having from 4 to 6 epoxy groups per molecule of chemical coupling agent.

37. (Cancelled)

38. (Original) The method as claimed in claim 31 further comprising selecting diesel oil as the organic combustible fuel.

39. (Original) The method as claimed in claim 31 further comprising selecting ammonium nitrate particles having a density above about 0.86 g/cc as the ammonium nitrate particles.

40. (Original) The method as claimed in claim 31 wherein the ammonium nitrate particles substantially comprise particles having diameters in a range of between about 0.5 to about 4 mm.

41. (Previously amended) The method as claimed in claim 31 wherein the ammonium nitrate particles substantially comprise particles having diameters in a range of between about 0.5 to about 1.5 mm.

42. (Original) The method as claimed in claim 31 further comprising selecting ammonium nitrate particles having a density above about 1.00 g/cc as the ammonium nitrate particles.

43. (Original) The method as claimed in claim 31 further comprising selecting a compound having an aliphatic portion with from about 14 to about 18 carbon atoms as the chemical coupling agent.

44. (Original) The method as claimed in claim 31 further comprising combining a sufficient amount of chemical coupling agent in the ANFO explosive composition such that the ANFO explosive composition has an oil separation less than about 1 %.

45. (Cancelled)

46. (Withdrawn) The method as claimed in claim 31 wherein step (a) comprises providing the inorganic oxidizer particles and the organic combustible fuel in a weight ratio of about 94 to 6.

47. (Cancelled)

48. (Previously presented) The method as claimed in claim 31 wherein step (a) comprises selecting at least one of fuel oil, heating oil, diesel fuel, jet fuel, kerosene, mineral oil, corn oil, saturated fatty acids and an alcohol as the organic combustible fuel.

49. (Previously presented) The method as claimed in claim 31 wherein step (a) comprises selecting diesel fuel as the organic combustible fuel.

50. (Cancelled)

51. (Previously Amended) The method as claimed in claim 31, wherein when the organic combustible fuel, ammonium nitrate particles, and chemical coupling agent are combined, the epoxy group is in an unopened state.

52. (Cancelled)

53. (Previously Presented) The method as claimed in claim 31, further comprising detonating the flowable ANFO explosive.

54. (Previously Presented) The method as claimed in claim 31, wherein step (d) has a duration of between 1 hour and 14 days.

55. (Previously Presented) The method as claimed in claim 31, further comprising storing the flowable ANFO explosive prior to placing the flowable ANFO explosive into the borehole.

56. (Previously Presented) The method as claimed in claim 31, wherein during step (d), the flowable ANFO explosive exhibits an oil separation of less than 1%.

IX. Evidence Appendix

No evidence is submitted herewith.

X. Related Proceedings Appendix

There are not other related proceeding.